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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/708,155

02/12/2004

Cheng-Kuang Lee

ACMP0076USA

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03/22/2005

NORTH AMERICA INTERNATIONAL PATENT OFFICE (NAIPC)

P.O. BOX 506

MERRIFIELD, VA 22116

EXAMINER

SEVER, ANDREW T

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/708,155

Applicant(s)

LEE ET AL.

Examiner

Andrew T. Sever

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 7-12 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 13-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Species I in the reply filed on 2/22/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Applicant did not indicate whether the election was with or without traverse, since no errors were pointed out as stated above; the election is being treated as an election without traverse.

2. Claims 7-12 and 20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 2/22/2005.

It should be noted this is already indicated on applicant's amended claims received on 2/22/2005.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Satou (US 6,517,212.)

Satou teaches in figure 8 a light source comprising:

A prism (28, there are 5 identical prisms present, however each one can be treated as a single prism) having a plurality of optical planes for redirecting light; and

A plurality of beam generators (1 and 2) for generating light beams and projecting the light beams to the optical planes;

Wherein the optical planes redirect the light beams to collect the light beams to form an enhanced light beam (See column 6.)

With regards to applicant's claim 2:

The optical planes reflect the light beams through total internal reflection (see column 6 lines 28-39)

With regards to applicant's claim 3:

See column 3 line 65 through column 4 line 4 which teaches that the prisms make use of total internal reflection.

With regards to applicant's claim 4:

Inherently any time light passes between a medium of one index of refraction to a medium of a different index it is refracted as is known from physics. Since in the case of the prisms of Satou the light enters the prism from air and therefore undergoes a first refraction, after total reflection to make it parallel with the optical axis it then leaves the prism, upon passing into the air it therefore is again refracted, a second refraction after the total reflection in the prism.

With regards to applicant's claim 5:

The prisms shown in figure 8 have 2 incidence planes (one for each beam generators).

With regards to applicant's claim 6:

The prism have three optical planes the light enters through 28b is totally internally reflected between the first and the second optical planes (the plane of the triangles that is not labeled) and then leaves through a third plane 28c.

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With regards to applicant's claim 15:

The beam generators comprises a light device for radiating light (2) and a light collector (4) for collecting the light radiated from the light device to form the beam.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 13, 14, and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satou as applied to claims 1-6 and 15 above, and further in view of Butterworth et al. (US 6,005,722.)

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Satou as described in more detail above teaches a light source including prisms for redirecting the light from a plurality of light generators. Satou further teaches in column 4 that figure 8 is part of a projection type display, however Satou's projector as shown in figure 4a does not include a light pipe or color wheel rather Satou utilizes an integrator made of fly-eye lenses and uses beam splitters to direct the light to multiple transmissive imagers. Butterworth teaches in column 1, that such imagers are more expensive and do not have as good of performance as reflective imagers. Butterworth teaches in column 2 that when utilizing reflective imagers, the use of a color wheel and a light pipe allows for a better image and also allows for the use of multiple light sources such as multiple LEDs. Butterworth teaches in figure 1 the makeup of such a projector (in the embodiment of figure 1 only 1 light source is provided, however as will be stated the light source will be replaced with that of Satou) which comprises the light source (12), a color wheel (14), a light pipe (36) and imager (18) and a projection lens (28) among other things. Given the superior performance of reflective imagers and the teaching by Butterworth of the need for the color wheel and light pipe when using such an imager; it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Butterworth's imaging core (the above described parts) in the projector of Satou so that a better projected image can be obtained.

With regards to applicant's claims 14 and 17:

Color wheels work by turning.

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With regards to applicant's claims 16, 18, and 19:

See above and the 102 rejection based on Satou.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 2004/0070842 to Bierhuizen teaches in figure 7 a multiple light source projector coupled with a light pipe.

US 6,196,699 to Stanton teaches in figure 2 a reflecting prism for combining two light sources.

US 2003/0227598 to Shouji teaches in figures 4 and 5 a two light source combining prism system.

US 6,224,217 to Tanaka teaches in figure 2a the use of a triangular prism for combining the light of two light sources.

US 6,183,093 to Sawai teaches in figure 1 a prism array 4 which combines the light from two light sources.

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US 1,949,892 to W. L. Wright teaches in figure 1 a multiple light source projector with combiner (24 and 25).

US 6,545,814 to Bartlett et al. teaches in figure 4 and 7 a multiple light source combining integrator.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AS


JUDY NGUYEN
SUPERVISORY PATENT EXAMINER